

=> d his

(FILE 'HOME' ENTERED AT 16:36:00 ON 15 DEC 2003)

FILE 'MEDLINE, EMBASE, SCISEARCH, BIOSIS, USPATFULL' ENTERED AT 16:36:17
ON 15 DEC 2003

L1	17 S REFLEX ALGORITHM
L2	20 S REFLEX? ALGORITHM?
L3	4 S L2 AND THYROID?
L4	4 DUP REM L3 (0 DUPLICATES REMOVED)
L5	13 DUP REM L2 (7 DUPLICATES REMOVED)

L5 ANSWER 8 OF 13 MEDLINE on STN DUPLICATE 1
 ACCESSION NUMBER: 1999188944 MEDLINE
 DOCUMENT NUMBER: 99188944 PubMed ID: 10090535
 TITLE: Reflex testing I: algorithm for lipid and lipoprotein
 measurement in coronary heart disease risk assessment.
 AUTHOR: Wu A H; Contois J H; Cole T G
 CORPORATE SOURCE: Clinical Chemistry Laboratory, Hartford Hospital, CT 06102,
 USA.. awu@harthosp.org
 SOURCE: CLINICA CHIMICA ACTA, (1999 Feb) 280 (1-2) 181-93.
 Journal code: 1302422. ISSN: 0009-8981.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199905
 ENTRY DATE: Entered STN: 19990601
 Last Updated on STN: 19990601
 Entered Medline: 19990517

AB We reviewed the current literature in order to construct a reflex testing
 algorithm that maximizes clinical utility and cost-effectiveness of lipid
 and lipoprotein testing. The algorithm was based on the 2nd Report of the
 National Cholesterol Education Program Adult Treatment Panel guidelines
 for use of total cholesterol (TC), triglycerides (TG), HDL-C, and LDL-C,
 and published reports describing the clinical use of apolipoprotein B and
 lipoprotein (a). The success of this algorithm was tested in a low-risk
 general and a high-risk hyperlipidemic patient population. Lipid data and
 non-lipid risk factors were obtained from a national database and from
 patients seen at two lipid clinics. A total of 16,968 individuals from
 the National Health and Nutrition Examination Survey III database
 comprised the low-risk group, and 239 patients examined in the Hartford
 Hospital and Washington University Lipid Clinics comprised the high-risk
 group. We found a solid scientific base to support the NCEP guidelines
 and reasonable support for limited testing of apoB and Lp(a). According
 to the algorithm, the direct LDL-C assay was deemed unnecessary in 98% and
 91% of low- and high-risk subjects, respectively, if one assumes that the
 Friedewald equation is adequate with TG < or = 4.00 g/l. With a more
 conservative cutoff of TG < or = 2.50 g/l, the algorithm canceled 92% and
 81% of direct LDL tests, respectively. The algorithm also limited TG to
 20 and 64%, apoB to 6 and 20%, and Lp(a) to 15 and 56%, of low- and
 high-risk groups, respectively. Use of a comprehensive, **reflex**
algorithm for coronary heart disease risk assessment will
 substantially reduce the utilization of laboratory services without
 diminishing the clinical value of these tests. The algorithm will prevent
 the overuse of certain expensive tests (direct LDL) while promoting the
 limited use of underutilized tests [apoB and Lp(a)].
 AB . . . to 6 and 20%, and Lp(a) to 15 and 56%, of low- and high-risk

L5 ANSWER 10 OF 13 MEDLINE on STN

ACCESSION NUMBER: 1998455555 MEDLINE
DOCUMENT NUMBER: 98455555 PubMed ID: 10184999
TITLE: The role of **reflexive (algorithmic)**
testing in laboratory medicine: adapting to the new era.
AUTHOR: Pearlman E S; Miele R; Swiss S; Bilello L; Stauffer J
CORPORATE SOURCE: Centralized Laboratory Services, Inc. (CLS), NY, USA.
SOURCE: CLINICAL LABORATORY MANAGEMENT REVIEW, (1998 Jul-Aug) 12
(4) 243-7.
Journal code: 8805785. ISSN: 0888-7950.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Health
ENTRY MONTH: 199811
ENTRY DATE: Entered STN: 20010223
Last Updated on STN: 20010223
Entered Medline: 19981117

AB Centralized Laboratory Services, Inc. (CLS) is a large, freestanding laboratory that is an affiliate of the Health Insurance Plan of New York, a managed care organization with more than 1 million members in New York and New Jersey. The laboratory work for this membership is consolidated at CLS, which thus serves an ambulatory patient population. The Medical Director at CLS is charged with optimizing laboratory utilization by clinicians who are part of the system.

TI The role of **reflexive (algorithmic)** testing in laboratory medicine: adapting to the new era.

L5 ANSWER 13 OF 13 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
ACCESSION NUMBER: 94:588731 SCISEARCH
THE GENUINE ARTICLE: NE169
TITLE: **REFLEXIVE ALGORITHMIC** APPROACH TO
CLINICAL DECISION-MAKING - BREAST-CANCER AS A MODEL
AUTHOR: AZIZ D C (Reprint); BARATHUR R R
CORPORATE SOURCE: SPECIALTY LABS INC, SANTA MONICA, CA, 90404
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF CELLULAR BIOCHEMISTRY, (1993) Supp. 17G, pp.
247.
ISSN: 0730-2312.
DOCUMENT TYPE: Conference; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: No References
TI **REFLEXIVE ALGORITHMIC** APPROACH TO CLINICAL
DECISION-MAKING - BREAST-CANCER AS A MODEL

=>

WEST☐ **Generate Collection** **Print**

L1: Entry 1 of 3

File: USPT

Aug 8, 2000

US-PAT-NO: 6099469

DOCUMENT-IDENTIFIER: US 6099469 A

**** See image for Certificate of Correction ****

TITLE: Reflex algorithm for early and cost effective diagnosis of myocardial infarctions suitable for automated diagnostic platforms

DATE-ISSUED: August 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Armstrong; E. Glenn	Stamford	CT	06902	
Petry; Christoph	Elmsford	NY	10523	
Wu; Alan	West Simsbury	CT	06092	
Wagner; Gerald	Upper Grandview	NY	10960	

US-CL-CURRENT: 600/300; 128/920, 600/481

CLAIMS:

We claim:

1. A method for detecting myocardial infarction in an individual, comprising the steps of:

performing one of a plurality of sequences of biochemical marker measurement steps prescribed by a reflex algorithm, each of the biochemical marker measurement steps including measuring a concentration level or activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at one of a plurality of times from admission, each sequence of the reflex algorithm beginning with a common first biochemical marker measurement step conducted on a first serum, plasma or whole blood sample obtained from said individual within a first predetermined time from admission, each of the biochemical marker measurement steps subsequent to the common first step selectively performed based on results from a precedent biochemical marker measurement step, each sequence terminating in a respective final biochemical marker measurement step conducted on serum, plasma or whole blood sampled from said individual at one of a plurality of different times subsequent to admission; and

providing an indication of myocardial infarction for said individual based on the sequence performed and on the results of the respective final biochemical marker measurement step.

2. The method according to claim 1, wherein each of said biochemical marker measurement steps measures at least one biochemical marker selected from the group consisting of myoglobin, total creatine kinase, creatine kinase MB, troponin T, troponin I, glycogen phosphorylase BB, lactate dehydrogenase, heart-type fatty acid binding protein (h-FABP), carbonic anhydrase III, actin, myosin, and creatine kinase MB isoforms.

3. The method according to claim 1 wherein said common first biochemical marker

measurement step includes measuring a plurality of biochemical markers having different rates of appearance.

4. The method according to claim 1, wherein said common first biochemical marker measurement step includes measuring myoglobin and total creatine-kinase.

5. The method according to claim 4, wherein, for said common first biochemical marker measurement step, a creatine-kinase activity below a predetermined level results in measuring myoglobin and creatine-kinase for serum, plasma or whole blood sampled from said individual subsequent to said first predetermined time.

6. The method according to claim 4, wherein, for said common first biochemical marker measurement step, a creatine-kinase activity above a predetermined level results in measuring creatine kinase MB for serum, plasma or whole blood sampled from said individual at said first predetermined time.

7. The method according to claim 1, wherein the biochemical markers include immunoassays and clinical chemistry assays.

8. The method according to claim 1, wherein said step of providing an indication includes providing an indication of time since onset of infarction.

9. The method according to claim 1, wherein said step of providing an indication includes providing the indication based on the results of the biochemical marker measurements in the sequence performed, thereby depending on the specific sequence performed.

10. The method according to claim 1, wherein one or more points along said reflex algorithm indicates a recommended treatment or test other than the biochemical marker measurements within the sequences of the reflex algorithm.

11. The method according to claim 10, wherein the recommended treatment or test other than the biochemical marker measurements is provided subsequent to one or more of said respective final biochemical marker measurement steps.

12. The method according to claim 1, wherein specification of the sequence of biochemical marker measurements is implemented by a digital computer according to a stored representation of said reflex algorithm.

13. The method according to claim 12, wherein said digital computer provides output indicative of a recommended treatment or test other than the biochemical marker measurements treatment at one or more points along said reflex algorithm.

14. The method according to claim 13, wherein the recommended treatment or test other than the biochemical marker measurements is provided subsequent to one or more of said respective final biochemical marker measurement steps.

15. The method according to claim 1, wherein said plurality of different times subsequent to admission include said first predetermined time within admission, a second time about four hours subsequent to said first time, a third time about four hours subsequent to said second time, and a fourth time about four hours subsequent to said third time.

16. A computer-implemented method for detecting myocardial infarction in an individual, comprising the steps of:

performing one of a plurality of sequences of biochemical marker measurement steps prescribed by a reflex algorithm implemented on a computer, each of the biochemical marker measurement steps including measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at one of a plurality of times from admission, each sequence of the reflex algorithm beginning with a common first biochemical marker measurement step conducted on a first serum, plasma or whole blood sample obtained from said individual

within a first predetermined time from admission, each of the biochemical marker measurement steps subsequent to the common first step selectively performed based on results from a precedent biochemical marker measurement step, each sequence terminating in a respective final biochemical marker measurement step conducted on serum, plasma or whole blood sampled from said individual at one of a plurality of different times subsequent to admission; and

providing an indication of myocardial infarction for said individual based on the sequence performed and on the results of the respective final biochemical marker measurement step.

17. The method according to claim 16, wherein said computer outputs signals to at least one automated laboratory analyzer to control execution of at least one of the biochemical marker measurements.

18. The method according to claim 17, wherein said at least one automated laboratory analyzer includes a clinical chemistry analyzer and an immunoassay analyzer.

19. The method according to claim 17, wherein said at least one automated laboratory analyzer includes a plurality of analyzers linked by an automatic sample handling device that allows sharing of samples.

20. The method according to claim 17, wherein said at least one automated laboratory analyzer and computer are part of an integrated diagnostic system.

21. The method according to claim 16, wherein said reflex algorithm is represented as code or data stored on a computer-readable medium accessible to a processor associated with said computer.

22. The method according to claim 16, wherein said reflex algorithm is represented as a database stored on a computer-readable medium, and wherein a processor associated with said computer executes an application program to implement the reflex algorithm.

23. A diagnostic system comprising:

an immunoassay analyzer;

a clinical chemistry analyzer;

a processor coupled to said immunoassay analyzer and to said clinical chemistry analyzer, wherein said processor commands said immunoassay analyzer and clinical chemistry analyzer to execute measurements specified by a program executed by the processor in order to facilitate diagnosis of acute myocardial infarction according to a reflex algorithm which includes at least one immunoassay and at least one clinical chemistry assay.

24. The diagnostic system according to claim 23, further comprising a hematology analyzer coupled to said processor, and wherein said measurements specified by the program include a measurement executed by the hematology analyzer in response to a command from said processor.

25. The diagnostic system according to claim 23, wherein said immunoassay analyzer and said clinical chemistry analyzer each have a respective local processor in communication with said processor, wherein the local processors respectively control execution of measurements specified by said processor on the immunoassay and clinical chemistry analyzer.

26. The diagnostic system according to claim 25, wherein said local processors each independently and selectively execute a local program or subroutine to control a sequence of measurements in response to a command from said processor.

27. A system for specifying a sequence of biochemical marker measurement steps for using an immunoassay and a clinical chemistry analyzer to generate an indication of myocardial infarction, the biochemical marker measurement steps including measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at a predetermined time from admission, the system comprising:

means for storing information representing a reflex algorithm indicating a plurality of predetermined sequences of biochemical marker measurements;

means for receiving information concerning outputs from biochemical marker measurements conducted on the immunoassay analyzer and the clinical chemistry analyzer, and

means for selectively specifying a biochemical marker measurement and for selectively specifying an indication of myocardial infarction according to the stored information in response to the information concerning outputs from biochemical marker measurements.

28. The system according to claim 27, wherein said receiving means is an input device used by an operator.

29. The system according to claim 27, wherein said receiving means is in communication with said immunoassay analyzer and said clinical chemistry analyzer for receiving said information concerning outputs.

30. The system according to claim 27, wherein said specifying means is in communication with said immunoassay analyzer and said clinical chemistry analyzer for commanding execution of the specified biochemical marker measurement.

31. A system for specifying a sequence of biochemical marker measurement steps for using an immunoassay and a clinical chemistry analyzer to generate an indication of myocardial infarction, the biochemical marker measurement steps including measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at a predetermined time from admission, the system comprising:

a computer-readable medium that stores information that represents a reflex algorithm in which a plurality of predetermined sequences of biochemical marker measurement steps; and

a processor that receives information concerning outputs from biochemical marker measurements conducted on the immunoassay analyzer and the clinical chemistry analyzer, and that selectively specifies a biochemical marker measurement and selectively specifies an indication of myocardial infarction according to the stored information in response to the information concerning outputs from biochemical marker measurements.

32. The system according to claim 31, further comprising an input device coupled to said processor and used by an operator to enter said information concerning outputs.

33. The system according to claim 31, wherein said processor is in communication with said immunoassay analyzer and said clinical chemistry analyzer to receive said information concerning outputs therefrom, and to send information indicative of a specified biochemical marker measurement to be executed thereto.

34. The system according to claim 33, wherein said immunoassay analyzer and said clinical chemistry analyzer each have a respective processor in communication with said processor.

35. The system according to claim 33, wherein said processor is coupled to said immunoassay analyzer and said clinical chemistry analyzer, and said processor communicates information to commands execution of the specified biochemical marker measurement.

36. The system according to claim 31, wherein said processor is in communication with said immunoassay analyzer and said clinical chemistry analyzer to send information indicative of a specified biochemical marker measurement to be executed thereto, and further comprising a patient database to which said immunoassay analyzer and said clinical chemistry analyzer write said information concerning outputs for a patient in response to respective tests executed thereby.

37. A system for detecting myocardial infarction in an individual, comprising:

means for specifying selective performance of one of a plurality of sequences of biochemical marker measurement steps prescribed by a reflex algorithm; and

means for providing an indication of myocardial infarction for said individual based on the sequence performed and on the results of the respective final biochemical marker measurement step;

wherein each of the biochemical marker measurement steps includes measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at a predetermined time from admission, each sequence of the reflex algorithm begins with a common first biochemical marker measurement step conducted on a first serum, plasma or whole blood sample obtained from said individual within a first predetermined time from admission, each of the biochemical marker measurement steps subsequent to the common first step is selectively performed based on results from a precedent biochemical marker measurement step, each sequence terminates in a respective final biochemical marker measurement step conducted on serum, plasma or whole blood sampled from said individual at a respective one of a plurality of different times subsequent to admission.

38. The system according to claim 37, further comprising an immunoassay analyzer and a clinical chemistry analyzer each in communication with said specifying means, each selectively receiving from said specifying means a command for invoking a biochemical marker measurement.

39. A computer program embodied on a computer-readable medium, comprising:

a code segment including a sequence of instructions to determine measurements to be executed by a clinical chemistry analyzer and an immunoassay analyzer according to a representation of a reflex algorithm; and

a code segment to output an indication of myocardial infarction based on the executed measurements.

40. The computer program embodied on a computer-readable medium according to claim 39, wherein said representation of a reflex algorithm is stored on the computer-readable medium.

41. The computer program embodied on a computer-readable medium according to claim 39, further comprising a communication code segment including instructions to communicate with the immunoassay analyzer and the clinical chemistry analyzer.

42. The computer program embodied on a computer-readable medium according to claim 41, wherein said communication code segment includes instructions operative in sending to said immunoassay analyzer and said clinical chemistry analyzer commands to execute measurements.

43. The computer program embodied on a computer-readable medium according to

claim 41, wherein said communication code segment includes instructions operative in receiving information concerning results from measurements executed by said immunoassay analyzer and said clinical chemistry analyzer.

44. A computer-implemented method for specifying a sequence of biochemical marker measurement steps for using an immunoassay and a clinical chemistry analyzer to generate an indication of myocardial infarction, the biochemical marker measurement steps including measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a serum, plasma or whole blood sample obtained from said individual at one of a plurality of times from admission, the method comprising the steps of:

storing information representing a reflex algorithm indicating a plurality of predetermined sequences of biochemical marker measurements;

measuring a concentration level or an activity of at least one biochemical marker of myocardial infarction in a first serum, plasma or whole blood sample obtained from said individual within a predetermined time from admission;

receiving information concerning outputs from biochemical marker measurements conducted on the immunoassay analyzer and the clinical chemistry analyzer; and

selectively specifying a biochemical marker measurement to be executed on the immunoassay analyzer or the clinical chemistry analyzer based on the information concerning outputs and on the stored information representing a reflex algorithm; and

specifying an indication of myocardial infarction according to the stored information in response to the information concerning outputs from biochemical marker measurements upon completing execution of one of the plurality of sequences.